

Amendment and Response

6770200-0001

Remarks

Upon an entry of the amendments set forth hereinabove, claims 5-39 and 83-84 are pending in the application.

In the amendments appearing hereinabove, claims 1, 2, 3 and 82 have been canceled, claims 5, 6, 7, 8, 12, 13, 15, 20, 22, 23, 26, 36, 37 and 39 have been amended, and new claims 83 and 84 have been added to the application. Support for the amendments that have been made to the various claims is discussed hereinbelow. No new matter has been added to the application by these amendments.

1. Rejection of Claims 1, 2 and 82 under 35 U.S.C. §102(b)

In the office action, the Patent Office rejected claims 1, 2 and 82 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,756,839 A.

Applicants respectfully disagree with the statements of the Patent Office in the office action. However, in order to *expedite the prosecution of this patent application, and an allowance of claims 5-39 and 83-84 thereof*, Applicants have canceled claims 1, 2 and 82 from the application in the amendments appearing hereinabove.

In view Applicants' cancellation of claims 1, 2 and 82 from the application, the Patent Office is respectfully requested to withdraw this rejection.

2. Rejection of Claim 3 under 35 U.S.C. §103(a)

In the office action, the Patent Office rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,756,839 A, as applied to claim 1, further in view of DE 41 08 341 A1.

Applicants respectfully disagree with the statements of the Patent Office in the office action. However, in order to *expedite the prosecution of this patent application, and an allowance of claims 5-39 and 83-84 thereof*, Applicants have canceled claim 3 from the application in the amendments appearing hereinabove.

In the office action, the Patent Office also stated the following:

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"This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a)."

The subject matter of the various claims that are present in the application was commonly owned at the time any inventions covered therein were made.

In view of Applicants' cancellation of claim 3 from the application, the Patent Office is respectfully requested to withdraw this rejection.

3. Allowable Subject Matter

In the office action, the Patent Office objected to claims 5-39 of the application as being dependent upon a rejected base claim, but stated that *these claims would be allowable if* rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In the amendments appearing hereinabove, Applicants amended claims 5-39 in the manner suggested by the Patent Office.

Additionally, because Applicants noticed that claim 5 and claim 6 were identical (as a result of an amendment made to claim 6 in the Amendment and Response dated May 11, 2009), Applicants amended claim 5 to change "10%" to "3%," so that these two claims would not be identical. Support for this amendment is present in the specification at page 37, line 15. Further, because such amendment to claim 5 would make amended claim 5 and claim 15 identical, Applicants also amended claim 15 to change "3%" to "2%". Support for this amendment is present in the specification at page 37, line 14. The phrase "and the detection component is present in an amount ranging from about 0.01% to about 10% by weight" was deleted from claim 7 as being redundant because claim 7 depends upon claim 6, and claim 6 includes this phrase. Also, the phrase "with the remainder of the weight percent of the composition being water" was deleted from claims 37 and 39 as being redundant because claims 37 and 39 each depend upon claim 36, and claim 36 includes the phrase "wherein the water is present in the

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composition in an amount that brings the percent weight of the composition to 100%.”

Additional minor amendments were also made to claims 12, 13, 22 and 23. Support for these amendments is present in original claim 1, and in the specification at page 25, line 23-31, page 26, lines 7-14, page 31, lines 1-15, and page 32, lines 1-11.

In view of the amendments made by Applicants to claims 5, 6 and 36 of the application, the Patent Office is respectfully requested *to allow claims 5-39 and 83 of the application, and permit the application to proceed to issue.*

4. New Dependent Claims 83 and 84

In the amendments appearing hereinabove, Applicants have added new claims 83 and 84 to the application, both of which are *dependent* claims.

New claim 83 is identical to the first several words of original claim 20, with the exception that it includes the phrase “potassium bicarbonate,” rather than the phrase “potassium carbonate.” Support for this new claim, thus, is present in original claims 1, 6 and 20 of the application, as well as in Applicants’ specification at page 28, lines 1-31, and page 29, lines 1-8, which state:

“Any suitable water-soluble, alkaline metal inorganic salts, which are known by those of skill in the art, and/or which are readily determined from sources known by those of skill in the art, such as Lange’s Handbook of Chemistry (Thirteenth Edition, McGraw Hill Book Company, New York, 1985), may be used in the compositions of the present invention. Lange’s Handbook of Chemistry lists physical constants of inorganic compounds that contain alkaline metal inorganic salts with both inorganic and organic cations. General examples of these alkaline metal inorganic salts include, but are not limited to, potassium, sodium, lithium, rubidium and cesium carbonates, sulfates, tartrates, nitrates, phosphates, gluconates, citrates, sorbates, lactates or halogens, or any combination of the foregoing. They preferably do not, however, include alkaline earth metal inorganic salts, such as magnesium, calcium, beryllium, strontium, barium, radium, scandium, yttrium, lanthanum or actinium inorganic salts. If alkaline earth metal inorganic salts are included as a component in the compositions of the invention, they should be included as an optional component in addition to the alkaline metal inorganic salts.

Specific examples of alkaline metal inorganic salts that may be used in the compositions of the present invention include, but are not limited to, potassium carbonate, potassium carbonate sesquihydrate, potassium gluconate, potassium citrate, potassium sorbate, potassium bromide, potassium chloride, potassium

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chromate, potassium fluoride, potassium iodide, potassium salicylate, potassium selenate, potassium silicate, potassium thioantimonate, potassium sulfide, potassium sulfate, potassium thiosulfate, potassium tartrate, potassium phosphate, sodium acetate, sodium carbonate, sodium formate, sodium sorbate, sodium sulfate, sodium tartrate, sodium nitrate, sodium phosphate, sodium gluconate, sodium citrate, sodium sorbate, lithium sulfate, lithium tartrate, lithium nitrate, lithium phosphate, rubidium acetate, rubidium carbonate, rubidium sulfate, cesium acetate, cesium sulfate or a combination of one or more of the foregoing.

Potassium carbonate (K_2CO_3), which can be prepared from potassium hydroxide and carbon dioxide, is a preferred alkaline metal inorganic salt for use in the compositions of the present invention, most preferably in an amount of about 25% by weight. It generally does not start to decompose into its decomposition components and, thus, have the ability to react with chain carriers to disrupt fire reactions, until it reaches its decomposition temperature. Anhydrous potassium carbonate begins to decompose at its melting point temperature of about $891^{\circ}C$ ($1635.8^{\circ}F$). However, rapid decomposition of potassium carbonate occurs at between about $500-600^{\circ}C$ ($932-1112^{\circ}F$) in the presence of water vapor, which is a product of combustion, and has an autocatalytic effect on the decomposition of potassium-based salts. These temperatures are higher than the temperatures reached in most house fires. For example, the temperature at which paper generally burns is about $204.44^{\circ}C$ ($400^{\circ}F$)."

Applicants' specification, at page 72, lines 24-28, incorporates into the specification by reference the entireties of each of the books, journal articles, patent applications, patents, other publications and Internet web cites that are cited in the specification. This includes Lange's Handbook of Chemistry (Thirteenth Edition, McGraw Hill Book Company, New York, 1985), which is cited on page 28, lines 3-4, of the specification, and is discussed above. Applicants have enclosed copies of the front cover, front page and page 9-44 of Lange's Handbook of Chemistry (Thirteenth Edition, McGraw Hill Book Company, New York, 1985), which discusses potassium bicarbonate ($KHCO_3$) therein (middle of page 9-44). Thus, support for the reference to potassium bicarbonate in new claim 83 is clearly present in Applicant's specification.

New claim 84 is identical to the first several words of original claim 22, with the exception that it includes the phrase "potassium metaborate," rather than the phrase "ammonium borate, sodium borate, potassium borate, calcium borate, potassium tetraborate or potassium pentaborate." Support for this new claim, thus, is present in original claims 1, 6 and 22 of the application, as well as in Applicants' specification at page 28, lines 1-31, and page 29, lines 1-8,

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which discusses Lange's Handbook of Chemistry. The discussion of, and quotations from, Lange's Handbook of Chemistry above in connection with new claim 83 is hereby incorporated by reference herein in its entirety with respect to new claim 84, and will not be repeated here. Applicants' specification also states the following:

"Any suitable boron-containing compounds, which are known by those of skill in the art, may be used in, or to produce, the compositions of the present invention, including, but not limited to, ammonium, sodium, potassium and calcium borates (ammonium borate, sodium borate (borax, $\text{Na}_2\text{B}_4\text{C}_7$), potassium borate and calcium borate) and boric acid. However, a preferred boron-containing compound for use in the production of the compositions of the present invention is boric acid, which reacts with components present in the potassium-containing alkaline compositions to produce a potassium borate compound, such as potassium tetraborate or potassium pentaborate, that becomes present in the compositions at a pH level of about 11 or higher, and that is preferably employed in the compositions in an amount of about 2% by weight."
[Emphasis added.]

Applicants' specification, at page 72, lines 24-28, incorporates into the specification by reference the entireties of each of the books, journal articles, patent applications, patents, other publications and Internet web cites that are cited in the specification. This includes Lange's Handbook of Chemistry (Thirteenth Edition, McGraw Hill Book Company, New York, 1985), which is cited on page 28, lines 3-4, of the specification, and is discussed above. Applicants have enclosed copies of the front cover, front page and page 9-43 of Lange's Handbook of Chemistry (Thirteenth Edition, McGraw Hill Book Company, New York, 1985), which discusses potassium metaborate (KBO_2) therein (nine lines from the bottom of page 9-43). In view of the foregoing, support for the reference to potassium metaborate in new claim 84 is clearly present in Applicant's specification.

5. Conclusion

Both in their Amendment and Response dated May 11, 2009, and in this present Amendment and Response, *Applicants have complied with each of the requirements of the Patent Office.*

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The office action dated April 16, 2009 that Applicants received from the Patent Office for the application states (page 5, lines 6-7):

"Claims 1-39 and 82 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action." [Emphasis added.]

Applicants complied with the above requirements of the Patent Office in their Amendment and Response dated May 11, 2009. As a result, Applicants were expecting to receive a Notice of Allowance for claims 1-3, 5-39 and 82 after they filed the May 11, 2009 Amendment and Response with the Patent Office. Applicants respectfully were, thus, surprised when they received a subsequent office action (dated October 15, 2009) from the Patent Office for the application, which included claim rejections that had not been made earlier (i.e., in the April 16, 2009 office action). (Applicants respectfully had been similarly surprised when they received three separate restriction requirements for the application from the Patent Office, with each restriction requirement making different requirements, even though they had properly responded to, and complied with, the various requirements made in the first and second restriction requirements.)

In view of the above, Applicants are respectfully concerned that their potential patent term of twenty years from the earliest filing date is being unnecessarily shortened by the Patent Office as a result of an unnecessarily lengthy prosecution of the application. Consequently, Applicants are very respectfully requesting that, if the Patent Office believes that any further issues in connection with the application need to be resolved, the Patent Office telephone the undersigned attorney at the telephone number indicated hereinbelow and resolve such issues over the telephone and/or via an "Examiner's Amendment." rather than mailing them another written communication, which will cause another delay in the prosecution of the application.

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Any fees that may be required for the proper filing of this Amendment and Response and any accompanying documents with the Patent Office, or in connection with the application generally, are hereby authorized to be deducted by the Patent Office from Deposit Account No. 122144.

Respectfully submitted,

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